Shropshire Botanical Society Newsletter

Spring 2003

Is it time to stop spraying?

Shropshire Botanical Society Newsletter No. 8 Spring 2003

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The Shropshire Botanical Society
www.shropshirebotany.org.uk

66 North Street, Shrewsbury, Shropshire, SY1 2JL
01743 343789
s.j.whild@bham.ac.uk
alex@whildassociates.co.uk

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Editor: Alex Lockton

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Botanical Society News

Sarah Whild

This is my last introduction as Chair of the society, as we have a rule that a person can only serve one term (two years). I hope this will succeed in encouraging more people to get involved in the work of the society. In the meantime, I shall continue to be the BSBI county recorder. The only nomination we have had for the new Chair is Alex Lockton, proposed by Roger Green and me. Paddy Martin is also standing down as secretary, and deserves our warm thanks for serving during what was a sometimes difficult time, as our new society settled in to its independent position. Mags Cousins has been nominated to serve as the new secretary. Roger Green has agreed to stay on as treasurer.

The society appears to be in a healthy state. There are currently 92 paid-up members and three life members. Our income in 2002 was just under £1,700 and our outgoings £1,500 (with a major part of that being the development costs of the web site database). Our bank account contains some £2,000. Full details will be available the AGM. We receive no public subsidy whatsoever, all our income coming from membership and sales, which gives us an important position of independence and scientific neutrality. Also in 2002 we collected 4,688 records, and took the total number of records in our database to 303,514. Many of these records, as you can see in the following pages, are as interesting as any collected in Shropshire in the past.

The following have contributed records since the last newsletter:

Peter Boardman
Peter Brown
John Clayfield
Mags Cousins
Ruth Dawes
Martin Godfrey
Nick Hodgetts
Jane Ing
Ray Knowles
Susan Lewis
Alex Lockton
Peter Lukey
David McCosh
Desmond Meikle
Jane Morris
Kevin Murphy
Franklyn Perring
Mike Porter
Jan Pursaill
Fred Rumsey
Ian Thompson
Jo Thompson
John Thompson
Kate Thorne
Tom Wall
Sarah Whild
Daniel Wrench

Annual General Meeting

Preston Montford Field Centre
2.30pm on Saturday 26th April 2003 (arrive from 2.00pm onwards)
Speaker: Andrew Law, Conservation Officer for the Countryside Council for Wales

The Conservation of the Montgomery Canal

One interesting recent event was the publication of the second Shropshire Biodiversity Action Plan, over which the Botanical Society was not consulted. This could explain why the only two plants included are Black Poplar and Green-winged Orchid. Bryophytes do not even get a mention. To make matters worse, the authors then comment on the inaccessibility of biological information in Shropshire, and its disparate and uncoordinated nature.

I am glad to say that these self-appointed experts on Shropshire's biodiversity could not have got it more wrong. I am proud of all the hard-working recorders who send in their records whether the motivation is conservation, curiosity or a love of wild plants. The achievements of the Botanical Society in publishing books, newsletters, and even the world's first county web site for biological recording are also a great credit.

This year there are plans to develop a new Records Centre for the county, and the Botanical Society will attempt to influence its development to ensure that it is a naturalist-led, scientific operation that supports natural history in the county. So far the chances of that do not look very great – the discussions have all been about servicing the needs of the agencies, industry and development. However, if that is what happens, it will be all the more important to have independent organisations like ours that can report on the state of the natural environment as best we can. Thank you all for your contribution in the last year; let's make this next one just as productive.

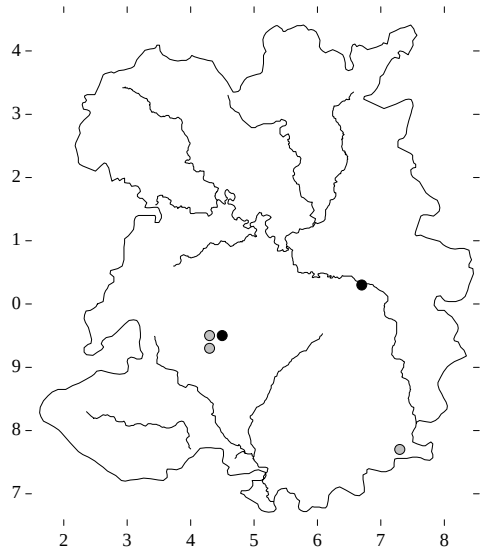
New Records

Alex Lockton

First county records

Nick Hodgetts found ***Metzgeria conjugata* Lindb.** at Benthall Edge, SJ6603, on 11th January 2003 while leading a group from the University of Birmingham. It is a liverwort of moist, base-rich rocks, and is widespread in Wales, Cumbria, the Pennines and in western Scotland, but very rare in lowland England. It has been recorded in the past: J.B. Duncan found it on the Long Mynd in 1906, where W.G. Travis also saw it in 1909, and Martha Newton did in 1994. Duncan also had it in the Wyre Forest in 1907 and along the Borle Brook in 1909. Despite these records, it is still listed as extinct in Shropshire in the BBS checklist, so each new record is technically a "first" until someone makes a voucher specimen.

Metzgeria conjugata



❖ On the same day Sarah Whild found the liverwort ***Plagiochila britannica* Paton** by the side of the old railway at the bottom of Benthall Edge, SJ6603, on 11th January 2003 (conf. N.G. Hodgetts, BBSUK). This species was first collected in the wild in 1964 and was only named in 1979, as it closely resembles other species of *Plagiochila*. It is sometimes described as rare in Britain and endemic, but we understand that it has now been found on the continent, and it is believed to be quite widespread in Britain (N.G. Hodgetts, *pers. comm.*).

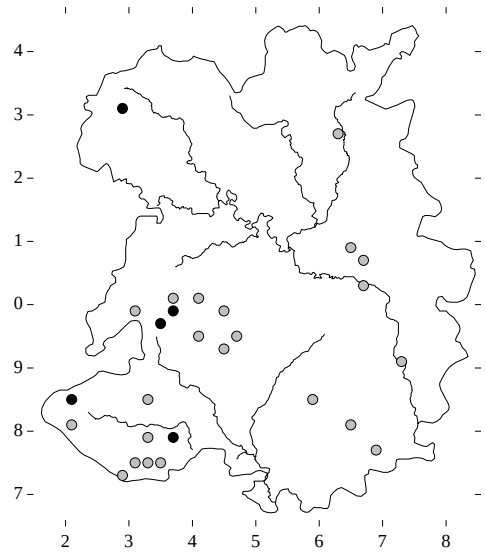
❖ John Clayfield recorded **Mexican Fleabane**, *Erigeron karvinskianus* DC., in various places in Ludlow (SO5174) in 2001 and 2002. This is quite a common garden escape, but it had not been recorded in Shropshire since 1982, when Bill Thompson found it at Dudmaston, so this is a second county record.

❖ Another find by John Clayfield was of **Early Crocus**, *Crocus tomasinianus* Herbert, established along a roadside near Myddle, SJ473237, on February 8th 2002. It had most likely come from garden waste.

Rare Plants

David Hatfield, of English Nature, found **Stag's-horn Clubmoss**, *Lycopodium clavatum* L. at Nipstone Rock on The Stiperstones, SO357971, in November 2002. There were just two plants, growing along the side of a track, which seems to be typical habitat for this species. This brings the current number of sites in the county to six, although at two of those (Stoneyhill and Old Oswestry) it has not been recorded lately.

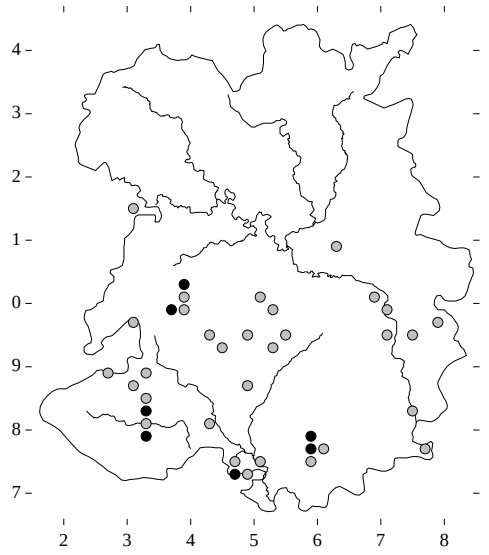
Lycopodium clavatum



❖ John Clayfield discovered a large population of **Oak Fern**, *Gymnocarpium dryopteris* (L.) Newman, at Black Hill, SO328797, in May 2002. The plants occur along the bank of a stream where the slope is too steep to have been planted up with conifers. This is a new hectad for Shropshire, although the New

Atlas already has a dot for this square, for Brampton Bryan in Herefordshire, which has a huge population of this fern. This species is now well outside the "rare" category, with nine current dots on the map.

Gymnocarpium dryopteris

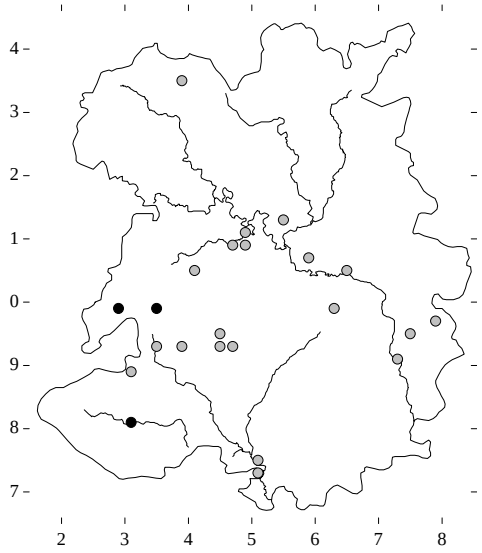


❖ One of the most surprising discoveries of the year was made on October 11th 2002 when Sarah Whild found **Mountain Male Fern**, *Dryopteris oreades* Fomin, on Earl's Hill, SJ410048 (conf. F.J. Rumsey, **BM,** Hb. **SFG**). This is only the second known site for the species in Shropshire, in what is surely one of the best-recorded sites. Although it is common enough in mountainous areas, the Shropshire sites are very much on the edge of its range. The total population of this species in the county is just two plants, with the other one being on Titterstone Clee, where it was refound by John Bingham in 2002.

❖ Tom Wall discovered a new site for *Dianthus deltoides* L, **Maiden Pink**, on a stone wall at Pennerley on the Stiperstones, SO354989, in August 2002 (conf. A.K. Thorne, 11/8/2002 Hb. **SFG**). This is an intriguing discovery. Maiden Pink is occasionally grown as a garden plant, but it seems unlikely that it was deliberately planted in this location. Instead, it is probably a casual from seed that arrived there by chance.

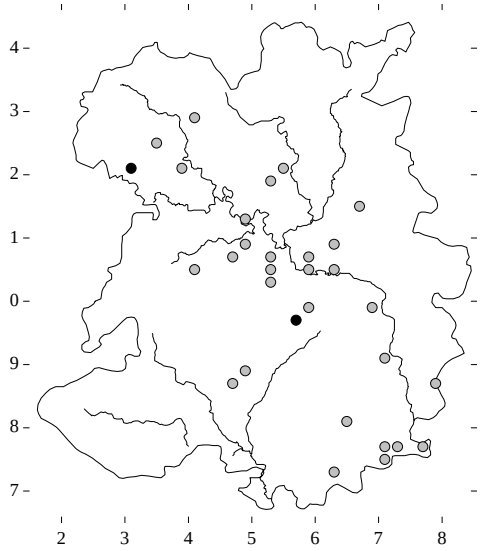
As we understand it, *D. deltoides* is in its native habitat when it occurs in unimproved U1 grassland, which is typical of the Longmyndian rocks in the centre and south-west of the county, and also formerly on the sandstones east of Bridgnorth. It was probably a casual at the site shown on the map in the north of the county and in the two near Ludlow.

Dianthus deltoides



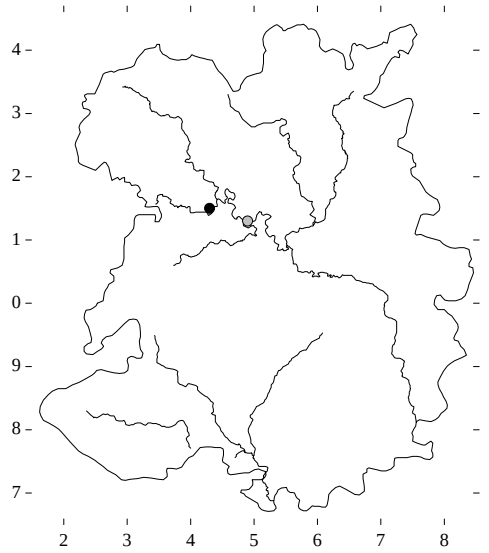
❖ Kate Thorne found **Sharp-leaved Fluellen**, *Kickxia elatine* (L.) Dumort. in a field of hemp at Maesbrook, SJ304209, on August 9th 2002 (conf. S.J. Whild, Hb. **SFG**). There are now very few sightings of this arable weed, and where it is found it tends to be very rare, presumably having come up from the seed bank. It has been recorded in six sites in the last fifteen years, and undoubtedly sporadic occurrences have been missed elsewhere, but it is certainly a county rarity.

Kickxia elatine



❖ The **Hybrid Yellow-cress** *Rorippa x anceps* (Wahlenb.) Reichb. (*R. amphibia* x *sylvestris*) is described in Sinker's Flora as quite common along the Severn, but we don't get many records for it. Leighton collected it in Shrewsbury, ca. SJ4912, in 1839 (conf. B.E. Jonsell, **BM**) and on 12th June 2002 Peter Lukey collected a specimen from the banks of the Severn at Preston Montford, SJ4314, which has also been confirmed by Jonsell. These are the only two properly localised records for the county.

Rorippa x anceps



❖ **Pennyroyal**, *Mentha pulegium* L., was found by Sarah Whild growing alongside the disused Severn Valley Railway line in Sutton, Shrewsbury just where it crosses the old A5 Roman Road, at SJ510104, on 29th September 2002. This plant is listed as "vulnerable" in the Red Data Book and it is protected under Schedule 8 of the Wildlife & Countryside Act 1981, which makes it illegal for anyone to pick it or harm it. It is also listed as a Priority Species on the UK Biodiversity Action Plan.

The last record for this species in Shropshire was in about 1805, when Dr John Evans (1756-1846) recorded it in wet fields near Llanymynech, ca. SJ2621. George Jorden listed it as a plant of the Wyre Forest in 1856, but didn't state whether it was on the Shropshire or Worcestershire side of the border. Two recent records given in Sinker's Flora have never been confirmed and seem very dubious.

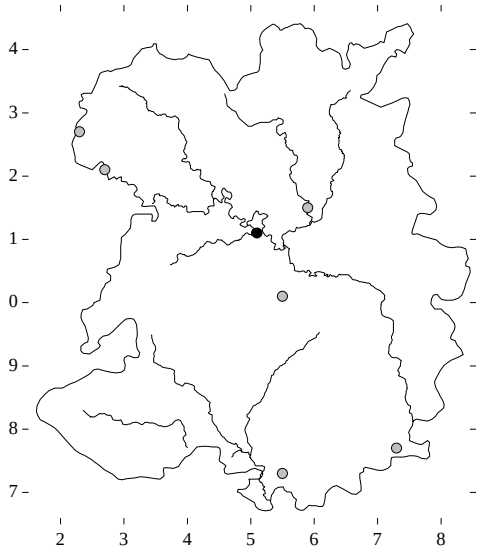
The following quadrat was recorded at the site.

Associated species of *Mentha pulegium*
SJ51081047
29th September 2002, SJW & AJL

Species	Domin score
Urtica dioica	5
Silene latifolia	3
Rubus fruticosus agg.	5
Trifolium repens	6
T. pratense	5
Geranium molle	1
Heracleum sphondylium	4
Daucus carota	1
Mentha pulegium	4
Lolium perenne	7
Poa annua	4
Dactylis glomerata	5
Arrhenatherum elatius	6
Holcus lanatus	5
Elytrigia repens	4

This suggests that the vegetation is either OV25 *Urtica dioica-Cirsium arvense* community, or MG1 *Arrhenatherum elatius* grassland. It is certainly a disturbed area: the ground alongside the track was dug up for pipe-laying a few years ago and this could, conceivably, have disturbed long-buried seed.

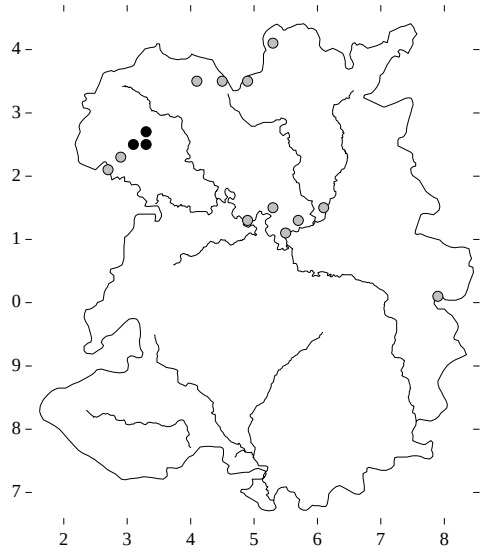
Mentha pulegium



❖ One plant that appears to be at great risk in Shropshire is **Flat-stalked Pondweed**, *Potamogeton friesii* Rupr. This species is almost entirely restricted to canals in the county – the only other site it has been recorded in was Snowdon Pool (SJ7801), as long ago as 1838. At one point it was quite widespread in the canal system, being found in the Shrewsbury, Prees Branch, Whitchurch, Llangollen and Montgomery Canals. Now it persists only in the short length of the Montgomery Canal between Aston Locks and Maesbury Marsh. It has never successfully colonised the off-line reserves.

On July 10th 2002 a small quantity was found in the restored but not yet boated section at Aston Locks (SJ339267, A.J. Lockton & S.J. Whild), which is actually a small extension to its range. Unfortunately the main population lies in the next stretch, which has suffered a series of unfortunate accidents in recent years, including a serious pollution incident, and twice being dewatered in 2002. It seems that unknown persons had left locks open, causing the water to run out completely. That part of the canal was officially re-opened earlier this year, so it will be interesting to see if the *P. friesii* returns. If not, it will probably have become extinct in the county.

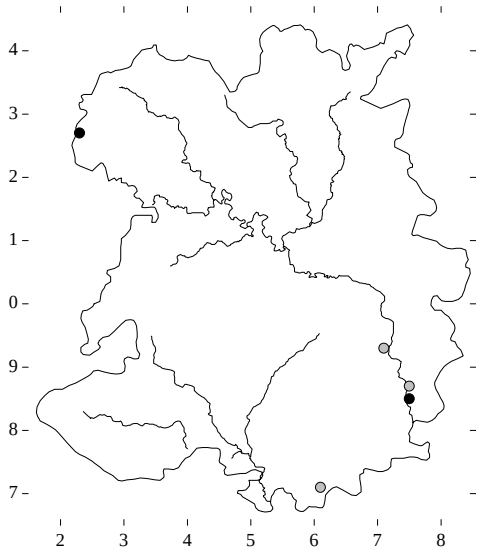
Potamogeton friesii



❖ Peter Lukey found the hybrid sedge *Carex x boenninghauseniana* Weihe (*Carex paniculata* x *remota*) at Trefonen Marshes, SJ246265, on 15th June 2002 (conf. M.S. Porter, Hb. **SFG**). This is only the second record for the county – the first being by Charles Sinker at the Prees Branch Canal in 1973. In fact, *C. x boenninghauseniana* is not all that rare in damp woodland where both the parents occur. It looks like a typical Greater Tussock-sedge, *C. paniculata*, but the spikelets are spaced out as in Remote Sedge, *C. remota*, and the bract is longer than the spike.

❖ An old site for **Yellow Star-of-Bethlehem**, *Gagea lutea* (L) Ker Gawler, was refound on 13th April 2003 by Ruth Dawes, Alex Lockton & Sarah Whild, at Craig-llwyn, SJ238275. This is one of five known localities for it in the Oswestry uplands (all in the same tetrad), and this particular population was thought to have been destroyed by agricultural intensification some years ago, as it was last seen by Doris Pugh in 1980. A few dozen plants were found to have survived on an inaccessible rock outcrop. This brings the number of currently known sites in the county to six, with three more lost or not recently seen.

Gagea lutea



Altitudinal limits

Maximum and minimum altitudes are given in the *New Atlas*, and John & Kate Thorne noticed that some of these are exceeded in Shropshire.

❖ *Moenchia erecta* (L.) P. Gaertn., P. Mey & Scherb., **Upright Chickweed**: 455m at Titterstone Clee (SO5977).

❖ *Trifolium micranthum* Viv., **Slender Trefoil**: 430m at Titterstone Clee.

❖ *Cerastium diffusum* Pers., **Dark-green Mouse-ear**: 455m at Titterstone Clee (same as at Dalnaspidal).

Field meetings in 2003

Sarah Whild

There are three main themes to meetings this year – Wenlock Edge, identification training days, and of course, some tetrad bashing for the BSBI Monitoring Scheme. I should emphasise that really, all meetings can be classified as training days – if you're a beginner, please do come along to learn and don't be afraid to ask. Things to bring – lunch and a drink if it's a day-long meeting. Boots or wellies, and waterproofs, and a hand lens if you have one plus a note book and field guide.

In the event that a meeting has to be cancelled at short notice, we cannot undertake to inform all members, so to avoid disappointment, call me on 01743 343789 a day or two beforehand to check.

Saturday April 26th AGM

AGM and Conservation of the Montgomery Canal (speaker Andy Law).
Meeting starts at 2.30pm at Preston Montford Field Centre, but arrive from 2.00pm onwards for tea and biscuits.

Wednesday 7th May Lyth Hill

Meet at 6 pm in the furthest car park (SJ472068) to record spring ephemerals and woodland plants.

Saturday 31st May Wenlock Edge

Meet at 10.30am in the main National Trust car park just out of Much Wenlock (SO613996) and we can move on from there. This is a training day in woodland plants, **plus** we will be looking for target species such as *Paris quadrifolia* and other ancient woodland plants that have not been recorded since the flora.

Sunday 8th June Limestone flora day

Meet at 11.00am in Turner's Lane lay-by (SJ276241) at Llynclys for day of limestone flora recording, looking for some key species such as *Hypericum montanum* and *Eriophorum latifolium.*

Tuesday 17th June Sedge Identification

Meet at 6.30pm for an evening of sedge identification in Loamhole Dingle and Ropewalk Meadow. Park at the bottom of Darby Road, Ironbridge (SJ667049) opposite the footbridge into the dingle. There is limited parking here so try to double up with cars.

Sunday 29th June SO38 Local change

Meet at 11.00am at the car park at Clun bridge (SO299807) to explore some of the tetrads in the south-west of the county.

Saturday 6th September Dudmaston

Meet at 11 am at the car park at Hampton Loade, SO747865, to explore the river path to the north, rather than the south, which we did two years ago.

Control of invasive alien species at Brown Moss

Sarah Whild & Alex Lockton

New Zealand Pigmyweed, *Crassula helmsii*, was first found at Brown Moss by Ian Trueman in 1990. He dug it up and disposed of it immediately. The following year it was back, and Robin Walls found a small clump of it near the main car park. After that it spread quite rapidly until 1995, when the warden, Frank Tanner, recorded it all around the main pool. Having heard stories about the destructive effect of this alien invader, Shropshire's ecologists were concerned about the threat to one of the county's most important sites. The newspapers were alerted and, true to form, sensationalised the issue even more, inventing the line that botanists has christened it "the creeping death."

In 1996 we wrote a management plan for the reserve which specified the removal of *Crassula helmsii* before any other work was undertaken. The rationale was that machinery and livestock would only help it to spread to the other pools, as it is "well known" that it can grow from tiny fragments, so any mechanical disturbance to it is inadvisable. The control was to be undertaken by spraying with glyphosate. After that, there was to be a programme of tree removal, bracken clearance, heathland restoration, and a reintroduction of livestock.

It would be premature to say that the management plan has failed, but it certainly has not succeeded yet. The County Council's wardens have worked hard to eradicate the *Crassula helmsii* by spraying it over the last 5 years. Unfortunately they cannot spray it in the water, so all that happens is that the *Crassula* recolonises the bare ground faster than anything else can. There is now far more *Crassula* than ever before, and rather less of anything else, and it is regrettable to have to say that the spraying is making things worse, not better.

Other aspects of the management plan have also been difficult to implement. Originally it was envisaged that 80% of the trees would come down, to restore the open heathland that existed 30 years ago. This was not popular with the locals, who seem to consider trees to be synonymous with wildlife – even secondary birch woodland with an impoverished ground flora. Only about 5% of the woodland has been cleared, but one remarkable result was that the pools, which until then had dried up each summer, suddenly filled with water and remained full. This could have been a coincidence, as there have been some wet summers recently, but we don't really know enough about the hydrology to say for sure.

The problem with tree felling is that, without some sort of continued management, they simply grow back again. The plan called for cattle grids, fencing (always problematic on common land) and the reintroduction of livestock for grazing. Without that, ultimately, Brown Moss has no chance of regaining its former reputation as Shropshire's best site for biodiversity. But this is a lot of work and strife for a local authority to commit itself to, especially when budgets are tight and it has other responsibilities.

The problems with Brown Moss are considerable, but not complex. *Crassula helmsii* is not exactly a desirable species, but it has proven to be far less of a threat than was first imagined, and in fact it does not seem to be very good at spreading at all. The story about tiny fragments getting everywhere has yet to be proven at Brown Moss as it has not colonised any of the other pools; the most likely scenario is that it spreads only by deliberate human action such as dumping of pond plants.

The danger with the *Crassula* issue is that it has distracted attention from far more important, but much more expensive and controversial management work. It seems that no-one objects to the control of alien invaders. It is popular, politically correct and provides work. Unfortunately, it has yet to offer any real quantifiable benefit to wildlife, so perhaps it is time to stop, at least on our most important wildlife sites. Bear in mind that Brown Moss is the only native site remaining in England for Floating Water-plantain, *Luronium natans*, and as such should be protected and managed under European law. So far we are failing in that responsibility, and it is time to look again at the management, ownership and conservation of what is arguably Shropshire's most important wildlife site.

Some observations on the ecology of *Orobanche rapum-genistae*

Kate Thorne

It is easy to fall into the habit of giving little corners of the countryside your own name for it if they have none. Thus it is that 'Bruce's Patch' (Pulverbatch) has gone into the archives as a site for Greater Broomrape *Orobanche rapum-genistae*, found there in some quantity in June 1998, much less so in 1999 and gone by 2000. All the plants were on margins of dense Broom *Cytisus scoparius* stands.

Bruce's Patch is a small stretch of steeply sloping ground, facing south, at the end of a long flat field belonging to Bruce (a local farmer). The slope is predominantly a hay meadow sward with abundant, very mature bushes of Broom. Signs that it has been woodland in the distant past are apparent in the moss and lichen-covered tree stumps and occasional bluebells. The flat part of the field is usually grown for hay which allows the slope to flourish through the summer before grazing (by cattle) is introduced. The flowers and the many butterflies and insects disappear gradually by late summer to be replaced by a short grassland with waxcaps. This should give a picture of grazed unimproved grassland with a little woodland influence, on a sunny south-facing slope, and with plenty of Broom.

Vegetation beneath Broom at Bruces' Patch:

Hyacinthoides non-scripta, Prunella vulgaris, Holcus mollis, Digitalis purpurea, Agrostis capillaris, Viola riviniana.

Grass sward with Broom at Bruce's Patch:

Rumex acetosa, Anthoxanthum odoratum, Cynosurus cristatus, Holcus lanatus, Ranunculus acris, Lolium perenne, Dactylis glomerata, Alopecurus pratensis, Trifolium pratense & *repens, Poa trivialis, Agrostis capillaris, Plantago lanceolata, Lathyrus pratense, Cerastium fontanum, Centaurea nigra, Trifolium dubium, Bellis perennis, Stellaria graminea, Hypericum maculatum, Conopodium majus* and *Phleum pratense.*

Looking at other Shropshire sites for this species, they have much in common.

Old Oswestry has slopes facing all ways with scattered stands of Broom. In June 2002, *Orobanche rapum-genistae* was only found on slopes facing between 210 to 190 degrees i.e. south/south-west. The vegetation here too is unimproved but is much more of a woodland type (this ancient fort was covered by woodland until World War II). Again the site is grazed and there has been some Broom management.

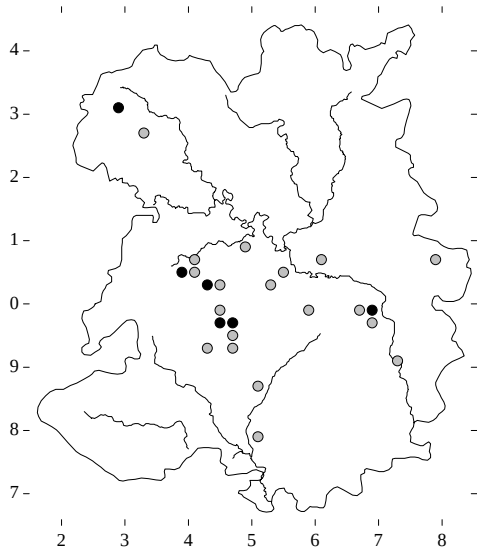
Immediate associates of *Orobanche rapum-genistae* at Old Oswestry

Pteridium aquilinum, Lonicera periclymenum, Luzula sylvatica & *campestris, Deschampsia flexuosa, Holcus mollis, Arrhenatherum elatius, Cerastium fontanum, Hypochaeris radicata.*

The Poles Coppice (Pontesbury) site is woodland edge with unimproved grazed pasture and on gently sloping ground facing south-west.

The site at Worsley (Long Mynd) does not appear to have any woodland influence but is a small south-facing slope in the middle of a grazed unimproved pasture. Only one piece was found here where only a little Broom was present. In the same field, larger stands of Broom on a north-facing slope had no Broomrape.

Orobanche rapum-genistae in Shropshire



It appears therefore that *Orobanche rapum-genistae* requires undisturbed ground, invariably unimproved grassland (acid to neutral) that is grazed and that may once have been woodland. A

south-facing slope is favoured and Broom (or Gorse perhaps) is essential. However there are more requirements. This species is invariably growing in bare ground close to the main stem of the Broom bush but always where there is some light i.e. only on margins of dense stands. The bushes may need to be at a particular stage in order to provide some bare ground beneath whilst also providing the right amount of shade i.e. it may be the state of the Broom that dictates the continued presence of Broomrape which only appears at certain stages of a natural or managed cycle of Broom growth, as follows.

The cycle

Stage 1: on an area of unimproved grassland plants may grow up and, as seed is scattered from the original bushes, stands develop. This stage may be unsuitable for Broomrape; at Old Oswestry young stands were found to have no Broomrape.

Stage 2: vegetation beneath becomes thin until there is bare ground below dense stands; this is perhaps the most likely stage at which Broomrape is seen (Old Oswestry, Bruce's Patch in 1998 and Worsley).

Stage 3: the bushes become more mature and leggy and eventually stems die; Broomrape may disappear (Bruce's Patch) but the presence of bracken may prolong the suitability of the site by providing some shade and bare ground (Old Oswestry).

Stage 4: half-dead bushes spread out and break up while ground vegetation takes hold; animals present, particularly cattle, may speed up the process. Alternatively the old Broom might be cut back at this point.

Stage 5: there may then be a period of grassland with little Broom present but eventually there will be new growth from old and new plants if grazing allows. **Return to stage 1.**

The cycle can be broken if cut stumps are treated or heavy grazing prevents re-growth. This may be the situation at Poles Coppice. It has also been suggested that Broomrape itself can break the cycle by damaging its host excessively!

It appears likely that the cycle takes about 20 – 35 years to come round. At Bruce's Patch, Broom was cut down about 15 – 20 years ago and it has nearly gone full circle. On another site (ungrazed, on The Knapp, Pulverbatch) a stand of Broom has grown up since the area was burnt accidentally 30 years ago and it has now also reached stage 4.

Combine a mature Broom bush with unimproved grassland, south-facing aspect and some grazing and there may be a recipe for a possible *Orobanche rapum-genistae* site either to look for or to create.

Records of *Orobanche rapum-genistae* in Shropshire

Acton Burnell, SJ5302, 1880, Beckwith, Mr W.E.
Ashes Hollow, SO4293, 1904, Beacall, Mr W.
Aston Munslow, SO510873, 1976, Fuller, Miss M.B.
Bagbatch, SO462963, 1979, Davidson, Ms H.M.
Bagbatch, SO462963, 1987, Warren, Ms J.A.
Bagbatch, SO460963, 2001, Cousins, Mrs M.
Bagbatch, SO462960, 2001, Cousins, Mrs M.
Bank Farm, SJ386041, 1990, Trueman, Prof I.C.
Bank Farm, SJ386041, 1992, Jones, Mr N.
Bank Farm, SJ386041, 1993, Whild, Ms S.J.
Brockholes Bank, SJ6106, 1880, Beckwith, Mr W.E.
Bruce's Patch, SJ437033, 1998, Thorne, Dr A.K.
Castle Place, SJ4403, 1892, Beacall, Mr W.
Cound, SJ5505, 1870, Griffiths, Dr G.H.
Earl's Hill, SJ4004, 1939, Pendlebury, Mrs H.F.
Hem Farm, SO6998, 1915, Pitt, Miss F.
Hem Farm, SO690982, 2002, Perry, Mr K.
Hope Bowdler Hill, SO4793, 1897, Painter, Rev W.H.
Mouse Hill Coppice, SO4695, 1907, Cobbold, Mr E.S.
Neach Hill, SJ7906, 1841, Lloyd, Dr G.
Old Oswestry, SJ295310, 1995, Thompson, Mr J.A.
Old Oswestry, SJ295310, 1996, Thompson, Mr J.A.
Old Oswestry, SJ295310, 1997, Perring, Dr F.H.
Old Oswestry, SJ293308, 1998, Muse, Mr A.
Old Oswestry, SJ293308, 1999, Whild, Ms S.J.
Old Oswestry, SJ295310, 2000, Mileto, Mr R.
Old Oswestry, SJ29403094, 2002, Whild, Ms S.J.
Poles Coppice, SJ387045, 2000, Whild, Ms S.J.
Pontesbury, SJ4006, 1923, White, Mr A.E.
Pulverbatch, SJ4202, 1892, Benson, Mr R.de.G.
Quatford Church, SO7390, 1841, Bidwell, Dr H.
Queen's Head, SJ3326, 1841, Dovaston, Mr J.F.M.
Sharpstone Hill, SJ4909, 1841, Leighton, Rev W.A.
Shortwood, SO5178, 1841, McGhie, Miss M.
Smethcott, SO4599, 1904, Thompson, Rev W.E.
Smethcott, SO4599, 1904, Beacall, Mr W.
The Albynes, SO6997, 1916, Pitt, Miss F.
The Albynes, SO6997, 1921, Pitt, Miss F.
The Hayes, Oswestry, SJ2830, 1770, Waring, Rev R.H.
Wenlock Edge, SO5998, 1909, Ley, Rev A.
Willey Park, SO6699, 1841, Brookes, Dr W.P.
Worsley, SO454962, 1979, Davidson, Ms H.M.
Worsley, SO454962, 1986, Warren, Ms J.A.
Worsley, SO456961, 2000, Thorne, Dr A.K.

Woodland grasses in Shropshire

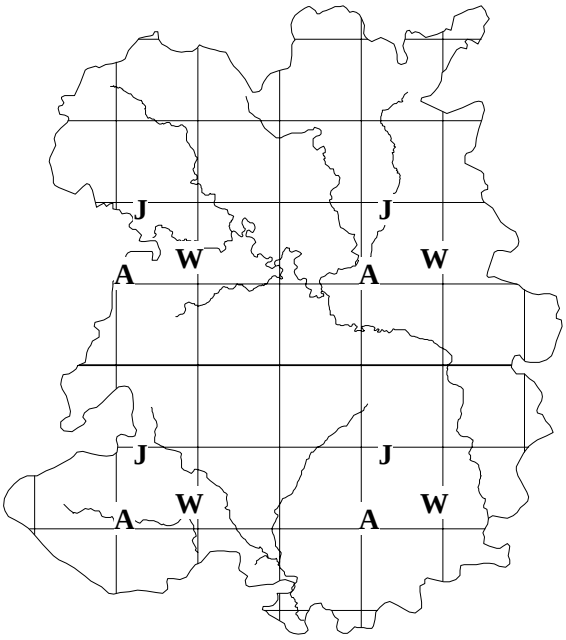
Sarah Whild

Species	Habit and habitat	Ligule	Distinguishing features
Brachypodium sylvaticum Wood False-brome	Medium-sized, tufted. Widespread, especially on limestone, also persisting in grassland.	Blunt, 1-6mm Membranous	Bright yellowy-green broad leaves, softly hairy all over. No auricle. Raceme. Awns.
Bromopsis ramosa Hairy Brome	Large, tufted grass. Widespread on limestone.	6-10mm, long, jagged, membranous	Downward hairs on leaf sheath. Auricle present, drooping panicle, awns.
Bromopsis benekenii Lesser Hairy Brome	Smaller than the above, but otherwise v. similar	1-3 mm, membranous	More erect panicle, glabrous stem above, hairless scale, on lowest spikelet.
Elymus canina Bearded Couch	Large tufted grass. Limestone, widespread, also along shaded river banks.	Membranous blunt, short, small auricles.	Very similar to common couch but no rhizomes. Spike. Long awns. Fairly common.
Festuca altissima Wood Fescue	Large, densely tufted. Very rare. Damp rocky ledges in woodlands especially where there is spray from rivers and waterfalls.	Blunt, torn ligule, up to 5mm. Small auricles.	Broad, hairless leaves, pale sheaths. Panicle. No awns.
Festuca gigantea Giant Fescue	Very large, tufted plant. Frequent, limestone woods.	V. short, but huge red clasping auricles.	Broad, shiny-green hairless leaves. Panicle. Long wavy awns.
Holcus mollis Creeping Soft-grass	Smallish, rhizomatous grass. Frequent on acid soils.	Ligules long, up to 5mm, membranous	Distinctive 'hairy knees', greyish appearance to plant. Panicle. Straight awns.
Hordelymus europaeus Wood Barley	Large tufted grass with 'barley-like' flower heads. Rare, but worth looking for in Shropshire on limestone.	Short membranous ligule, curved auricles.	Light green, similar in appearance to bearded couch, but spikelets in sets of three within the spike. Spike. Awns.
Melica nutans Mountain Melick	Short rhizomes. Uncommon, limestone woodlands and grykes. Worth looking for on limestone.	Short, blunt membranous ligule. No additional 'tooth'.	Distinctive single 'row' of large single florets with large purplish glumes. Raceme. No awns.
Melica uniflora Wood Melick	Small, rhizomatous patch-forming grass. Widespread and frequent on basic soils.	Blunt, membranous < 2mm	Single, distinctive flowers in dark purple-brown glumes. Little 'tooth' opposing the ligule. Panicle. No awns.
Milium effusum Wood millet	Large, tufted plants. Frequent in old woodlands on a range of soils from slightly acid to slightly basic.	Pointed, 3 – 10mm	Light-ish green, broad leaves. Hairless, no auricles. Panicle. No awns.
Poa nemoralis Wood Meadow-grass	Short rhizomes, medium-sized grass. Frequent and widespread in a range of neutral to basic woodlands.	Absent, or v. short.	Clump-forming, small, distinctive angle of leaf blade (rather tastelessly known as Heil Hitler grass!). Panicle. No awns.

Local Change in Shropshire

Alex Lockton & Sarah Whild

This year and next we are to repeat the BSBI's Monitoring Scheme, a sample survey of three tetrads in one in nine hectads across Britain. The first run, in 1987 – '88, caused a huge amount of debate about the theory and techniques of botanical recording. This second attempt, sixteen years after the first one, will answer those questions because now we have something to compare the results with.



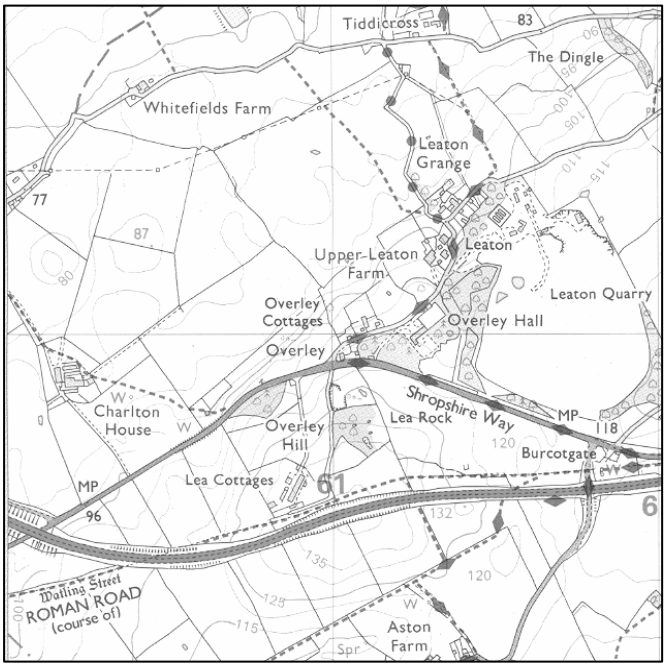
The process is simple – just record all the species you can find in 12 tetrads across the county. The tetrads are the A, J & W tetrads in the hectads SJ31, SJ61, SO38 and SO68, as shown in the map below. A similar set of squares is simultaneously being surveyed in all the other counties of Britain.

The purpose is to attempt to quantify the changes that are occurring to plants and vegetation on a timescale much shorter than we normally work to. This would complement the annual bird surveys, and give quick feedback on the effects that land management has on plants. If it works it could become a regular event.

In this newsletter we analyse the three tetrads that are to be surveyed in the hectad SJ61, which is situated to the north and west of Telford.
The tetrad SJ61A is to the west of Wellington and is in a rural part of the county. Major changes since 1988 have been the construction of the new A5 dual carriageway and the expansion of Leaton Quarry to about 30ha, together with what looks like a major tree-planting exercise around the edges.

The earliest record for this square is by William Beckwith, who found Smith's Pepperwort *Lepidium heterophyllum* by the chapel on Overley Hill in 1889. It has not been recorded there again. There are no more records until 1976 when Dorothy Evans and Audrey Franks started surveying for Sinker's Flora project. They found Snow-in-Summer *Cerastium tomentosum*, Larch *Larix decidua*, and Greater Periwinkle *Vinca major*. In 1980 they added Cut-leaved Dead-nettle *Lamium hybridum*, and Opium Poppy *Papaver somniferum*. None of those species has been recorded again, either.

Some 42 other species were recorded in this tetrad for Sinker's Flora, presumably by Evans & Franks. Of these only 22 were subsequently found during the Monitoring Scheme visits in 1987. These were undertaken by Winifred Hutton (18th June, 13th & 20th September) and by Ian Trueman, Jean Rapson and Jan Concelly (8th July). Between them they recorded 216 species out of a total of 249 ever reported in this square. None of these species is in any way rare or unusual – they are all common and unremarkable.



SJ61A in 2000 © Crown Copyright

Strangely, perhaps, the tetrad became a lot more interesting with the arrival of the motorway. In 1990 John Martin reported Crimson Clover *Trifolium incarnatum* ssp. *incarnatum* on the embankment of the new road. This species was formerly planted as a fodder crop and still turns up as a casual every now and then. There has only ever been one other record of it in Shropshire, in 1954.

In 1996 Ruth and Allan Dawes recorded Danish Scurvygrass *Cochlearia danica*, along this stretch of the new road. This species was considered to have become extinct in the county in 1899, but started turning up on roadsides in 1993 and has now spread widely.

Rob Stokes then made first county records with Garden Radish *Raphanus sativus*, and Highclere Holly *Ilex x altaclerensis*, in 1997. His Black Nightshade *Solanum nigrum* ssp. *schultesii*, was only the third record for the county. Then in 2001 John Mason found Reflexed Saltmarsh-grass *Puccinellia distans*, another first for the county.

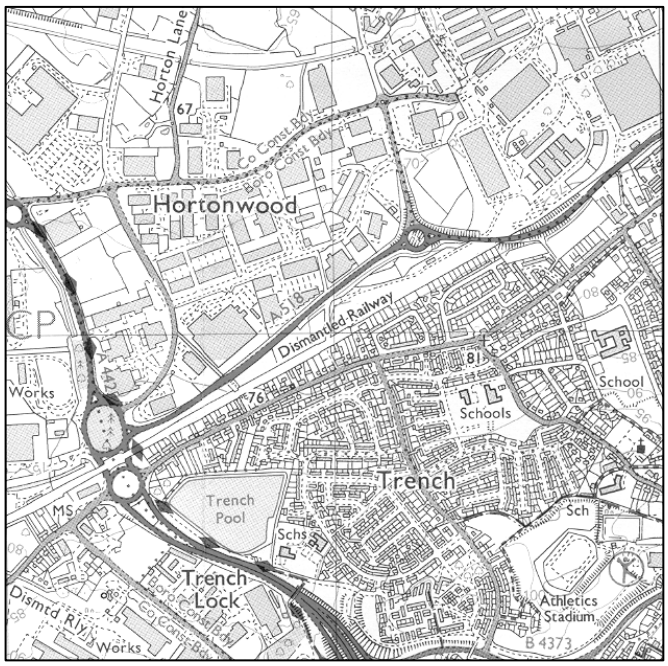
We have, regrettably, no historical records for this area at all. The oldest ones that can be reliably localised to this tetrad date from July 18th 1982, when W.A. Thompson recorded Prickly Lettuce *Lactuca serriola*, at the north end of Middle Pool, at SJ688120. Apart from this, there are just 29 other records for this tetrad in Sinker's Flora – possibly all made by Bill Thompson on that day. It is worth bearing in mind, though, that a plant had to be on the B list to warrant inclusion, so those 29 records are quite interesting, and include Early-purple Orchid *Orchis mascula*, Soapwort *Saponaria officinalis*, and Duke of Argyll's Teaplant *Lycium barbarum*.

The next survey was on 26th August 1987, when Jean Rapson and Jan Concelly surveyed for the first run of the Monitoring Scheme. They recorded 90 species, including 9 that were in the Flora list and 81 new ones – mostly what would have been considered A species in the past. They did not find any rarities, but Fine-leaved Water-dropwort *Oenanthe aquatica* was a good addition to the list, as were Water Chickweed *Myosoton aquaticum* and Tall Rocket *Sisymbrium altissimum*.

In 1988 Ian Trueman surveyed again, finding a total of 202 species, of which 8 were on the first list, 64 were on the second list, 6 were on both previous lists and 125 were new. This demonstrates that the level of recording, at least up to then, was nowhere near comprehensive. None of the species found by Trueman were rare

SJ61W in 1988 © Crown copyright

at all, but some are quite interesting. Bifid Hemp-nettle *Galeopsis bifida*, and Common Fleabane *Pulicaria dysenterica*, reflect the presence of damp, peaty soils. The hawkweed *Hieracium vagum* and Smith's Pepperwort *Lepidium heterophyllum*, need drier substrates. Although it seems there was little good quality semi-natural habitat, there are still plenty of interesting species to challenge the surveyor.



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Since the Monitoring Scheme there has been just one other survey of the area. In 1995 we were fortunate to be able to survey the land around a computer factory where there were plans for more development. The presence of great crested newts meant that an ecological survey was required, so there was an opportunity to see what else was there. In the few acres of this private site we found the first rare plant for the tetrad – Great Burnet *Sanguisorba officinalis* – plus another 130 species. Of these, 27 had not been recorded previously and just three had been recorded during all three previous surveys. These were White Campion *Silene latifolia*, Goat Willow *Salix caprea*, and Holly *Ilex aquifolium*. It is good news, though, that some 75% of the species recorded had indeed been seen before, so it is beginning to look as if the majority of species present have now been recorded at some time. But what can we hope to find by a new survey of the entire tetrad?

Clearly it has lost most, if not all, of the 1km^2 of farmland that it had in 1987/8, but it is likely that most of the species will persist on the margins. The scrubby field in the NE sector is now an ordnance depot, and there is a distinct lack of woodland, except on the traffic island. The spoil heaps in the SE corner are now an athletics stadium. Railway lines are no longer depicted, and the gardens of the houses adjacent to the disused line seem to have elongated across it. The biggest problem is going to be access – it would take days to contact all the big landowners and get permission to survey their property, even if the MoD is minded to allow visitors in the current political climate. An alternative is to simply survey the public areas. Perhaps that would be the best approach, as anything else would be a burden for future surveyors.

The hope is that the amassed information from all the counties of Britain will reveal some interesting trends. It is unlikely that the data for this tetrad alone will tell us anything we can't see from the map. A good feature of the scheme, though, is that it persuades us to botanise in areas that are otherwise completely neglected. Most ecologists called out to look at newts couldn't and wouldn't survey plants, let alone submit the data to the BSBI, and without that chance occurrence everything we know about the botany of this part of Shropshire has depended on the previous tetrad-bashing exercises. There is, of course, also the interesting challenge of testing one's botanical knowledge, with the added incentive of knowing that people might be going through your records with a fine-toothed comb every few years for the next century or so. One species listed in the previous surveys has been omitted from this report and from the data set: *Lupinus polyphyllus*. It seems the species itself is very rare, so records are not accepted without a voucher specimen. However, lupins are quite common along roadsides in Telford, so if anyone wants the first record of the common *Lupinus x regalis* in SJ61W, here is your opportunity.

Monitoring Scheme Square SJ61

	A	**J**	**W**
Acer campestre	1987	1988	1995
A. pseudoplatanus	1987	1988	1995
Achillea millefolium	1987	1988	1995
Aegopodium podagraria	1987	-	1988
Aesculus hippocastanum	1984	-	-
Aethusa cynapium	-	1987	1988
Agrimonia eupatoria	-	1987	-
Agrostemma githago	-	1902	-
Agrostis canina	1987	-	-
A. capillaris	1987	1988	1995
A. gigantea	1987	-	1995
A. stolonifera	1987	1988	1995
Aira praecox	1987	-	-
Ajuga reptans	1987	-	-
Alliaria petiolata	1987	1988	1988
Alnus glutinosa	1987	-	1995
Alopecurus geniculatus	-	-	1995
A. pratensis	1987	-	1995
Anagallis arvensis	1987	1987	1995
Anchusa arvensis	1987	-	-
Anisantha sterilis	1987	1988	1995
Anthemis cotula	1984	1984	-
Anthoxanthum odoratum	1987	1988	1995
Anthriscus caucalis	-	1898	-
A. sylvestris	1987	1988	1995
Aphanes arvensis agg.	1987	-	-
A. australis	1987	-	-
Apium nodiflorum	-	1988	1988
Arabidopsis thaliana	1984	1988	-
Arctium minus	1987	1988	1995
Armoracia rusticana	1987	1988	1988
Arrhenatherum elatius	1987	1988	1995
Artemisia absinthium	-	-	1988
A. vulgaris	1987	1988	1995
Arum maculatum	-	-	1988
Asplenium adiantum-nigrum	-	1988	-
A. ruta-muraria	-	1877	-
Atriplex patula	1987	-	1988
Avena fatua	1984	1988	-
Azolla filiculoides	-	1988	-

	A	J	W		A	J	W
Ballota nigra	-	1988	1988	*Dryopteris filix-mas*	1987	1987	1988
Bellis perennis	1987	-	1988	*Elodea canadensis*	-	1984	-
Betula pendula	-	-	1995	*Elymus caninus*	-	-	1995
Brassica napus	-	1988	1988	*Elytrigia repens*	1987	-	1995
B. nigra	-	1984	-	*Epilobium ciliatum*	1987	1988	1988
B. rapa	1987	-	-	*E. hirsutum*	1987	1988	1995
Bromus hordeaceus	1987	1988	1988	*E. montanum*	1987	-	1995
Bryonia dioica	1987	1988	-	*E. obscurum*	-	1988	-
Callitriche hamulata	1987	-	-	*E. parviflorum*	1987	-	-
Calluna vulgaris	-	-	1984	*E. tetragonum*	-	-	1995
Calystegia sepium ssp. *sepium*	1987	1988	1988	*Equisetum arvense*	1987	1988	1995
C. silvatica	1987	1988	1988	*E. fluviatile*	-	-	1987
Campanula rotundifolia	-	1987	-	*Erodium cicutarium*	-	1984	-
Capsella bursa-pastoris	1987	1988	1995	*Erophila verna*	1984	-	-
Cardamine flexuosa	-	-	1987	*Erysimum cheiranthoides*	-	1998	-
C. hirsuta	-	-	1988	*Euonymus europaeus*	-	-	1988
Carduus nutans	1987	1988	1987	*Eupatorium cannabinum*	-	-	1987
Carex acutiformis	-	-	1995	*Euphorbia helioscopia*	-	1988	1988
C. flacca	-	-	1988	*E. peplus*	1987	1988	1988
C. hirta	-	1988	1995	*Fagus sylvatica*	1987	-	-
C. muricata ssp. *lamprocarpa*	1987	-	-	*Fallopia convolvulus*	1987	1988	1988
C. otrubae	-	-	1995	*F. japonica*	-	-	1988
C. ovalis	1987	-	1995	*F. arundinacea*	-	-	1995
C. pilulifera	1987	-	-	*F. ovina*	1987	1987	1988
Carpinus betulus	1987	-	-	*F. pratensis*	-	-	1984
Centaurea nigra	1987	1988	1995	*F. rubra*	1987	1988	1995
Centaurium erythraea	1987	-	1995	*Filago minima*	-	1899	-
Cerastium arvense	1987	-	-	*Filipendula ulmaria*	-	1988	1995
C. fontanum	1987	1988	1995	*Fraxinus excelsior*	1987	1988	1995
C. glomeratum	1987	1984	1988	*Fumaria muralis* ssp. *boraei*	1984	-	-
C. tomentosum	1976	-	-	*F. officinalis*	1987	1987	1988
Ceratocapnos claviculata	1987	-	-	*Galeopsis bifida*	1987	-	1988
Chaerophyllum temulum	1987	1988	1995	*G. tetrahit*	1987	-	-
Chamerion angustifolium	1987	1988	1995	*Galium aparine*	1987	1988	1995
Chenopodium album	1987	1988	1988	*G. palustre*	1987	-	-
C. bonus-henricus	-	-	1987	*G. saxatile*	1987	-	-
C. polyspermum	1987	-	-	*G. verum*	-	1987	-
C. rubrum	-	-	1988	*Geranium dissectum*	-	1988	1995
Cirsium arvense	1987	1988	1995	*G. molle*	1987	1988	-
C. palustre	-	-	1988	*G. pratense*	1987	-	-
C. vulgare	1987	1988	1995	*G. robertianum*	1987	1988	-
Cochlearia danica	1996	1993	-	*Geum urbanum*	1987	-	-
Conium maculatum	-	1988	-	*Glechoma hederacea*	-	1988	1995
Conopodium majus	1987	-	-	*Glyceria fluitans*	1987	-	1995
Convolvulus arvensis	1987	1988	1988	*G. maxima*	-	1988	1987
Cornus sanguinea	1987	-	1988	*G. notata*	-	1984	1988
Coronopus didymus	1987	-	-	*Gnaphalium uliginosum*	1987	-	1988
C. squamatus	1987	-	-	*Hedera helix*	1987	1988	1995
Corylus avellana	1987	1988	1995	*Heracleum sphondylium*	1987	-	1995
Crataegus monogyna	1987	1988	1995	*Hieracium vagum*	-	-	1988
Crepis capillaris	1987	-	1995	*Holcus lanatus*	1987	1987	1995
Cruciata laevipes	1984	-	-	*H. mollis*	1987	1988	1988
Cynosurus cristatus	1987	-	1995	*Hordeum murinum*	1987	1988	1988
Cytisus scoparius	1987	-	1988	*Humulus lupulus*	-	-	1988
Dactylis glomerata	1987	1988	1995	*Hyacinthoides non-scripta*	1987	-	-
Daucus carota	-	1987	1988	*Hypericum maculatum*	-	-	1995
Deschampsia cespitosa	1987	1988	1995	*H. perforatum*	1987	1987	1988
D. flexuosa	1987	-	1984	*H. pulchrum*	1987	-	-
Digitalis purpurea	1987	1988	1995	*Hypochaeris radicata*	1987	1988	1995

	A	J	W
Ilex aquifolium	1987	1988	1995
I. x altaclerensis	1997	-	-
Impatiens capensis	-	1996	-
I. glandulifera	-	1988	-
Iris pseudacorus	-	-	1995
Juncus acutiflorus	1987	-	1988
J. articulatus	-	-	1988
J. bufonius	-	-	1988
J. bufonius agg.	1987	1988	-
J. conglomeratus	1987	-	1995
J. effusus	1987	1988	1995
J. inflexus	-	-	1995
Knautia arvensis	1984	1987	1988
Lactuca serriola	-	-	1995
Lamiastrum galeobdolon	-	-	1984
Lamium album	1987	1988	1995
L. amplexicaule	1984	1988	-
L. hybridum	1980	-	-
L. purpureum	1987	-	1988
Lapsana communis	1987	1988	1995
Larix decidua	1976	-	-
Lathyrus pratensis	1987	1987	1995
Leontodon autumnalis	-	1988	1995
L. saxatilis	-	-	1984
Lepidium heterophyllum	1889	-	1988
Leucanthemum vulgare	1987	-	1995
Ligustrum vulgare	1987	1988	1988
Linaria vulgaris	1987	-	1987
Lolium multiflorum	1987	-	-
L. perenne	1987	1988	1995
Lonicera periclymenum	1987	1987	-
Lotus corniculatus	1987	1987	1995
L. pedunculatus	1987	-	1995
Lycium barbarum	1987	-	1988
Lycopus europaeus	-	1988	1987
Lythrum salicaria	-	1984	-
Malus domestica	1987	-	-
M. sylvestris	-	1988	1995
Malva moschata	1987	-	-
M. neglecta	-	1984	-
M. sylvestris	1987	1988	1988
Matricaria discoidea	1987	1988	1988
M. recutita	1990	1988	1988
Medicago lupulina	1987	1988	1995
Melica uniflora	1984	-	-
Melilotus albus	1987	-	-
Mentha aquatica	-	-	1995
Mercurialis perennis	-	-	1988
Mycelis muralis	1987	-	1984
Myosotis arvensis	1987	1988	-
M. discolor	1987	-	-
M. laxa	-	1984	1995
M. scorpioides	-	1988	-
Myosoton aquaticum	-	-	1987
Myriophyllum spicatum	-	1984	-
Odontites vernus	-	-	1988
Oenanthe aquatica	-	-	1995
O. crocata	-	-	1987
Ononis repens	-	1987	1995

	A	J	W
Orchis mascula	-	-	1984
Ornithopus perpusillus	-	1898	-
Papaver dubium ssp. *dubium*	1987	1988	1995
P. rhoeas	1987	1987	-
P. somniferum	1980	-	-
Pentaglottis sempervirens	1987	-	1988
Persicaria amphibia	-	-	1988
P. bistorta	-	-	1987
P. hydropiper	1987	1988	-
P. lapathifolia	1987	-	1988
P. maculosa	1987	1988	1995
Phalaris arundinacea	-	1988	1995
Phleum pratense	1987	1987	1995
Phragmites australis	-	1994	1984
Pilosella officinarum	1987	1987	-
Pinus sp.	-	-	1995
Plantago lanceolata	1987	1988	1995
P. major	1987	1988	1995
P. media	1987	-	-
Poa annua	1987	1988	1995
P. nemoralis	1987	-	-
P. pratensis	1987	1988	1995
P. trivialis	1987	1988	1988
Polygala vulgaris	-	1984	-
Polygonum aviculare agg.	1987	1988	1995
Populus alba	-	-	1995
P. tremula	-	-	1995
P. x canadensis	-	-	1987
Potentilla anserina	1987	1988	1995
P. erecta	-	-	1995
P. reptans	1987	1987	1995
P. x mixta	1987	-	-
Prunella vulgaris	-	-	1995
Prunus domestica	1987	-	1988
P. spinosa	1987	1988	1995
Pteridium aquilinum	1987	1988	1988
Puccinellia distans	2001	-	-
Pulicaria dysenterica	-	-	1995
Quercus petraea	1987	-	-
Q. robur	1987	1988	1995
Ranunculus acris	-	-	1995
R. fluitans	-	1984	-
R. repens	1987	1988	1995
R. sceleratus	-	1984	1984
Raphanus raphanistrum	1987	-	-
R. sativus	1997	-	-
Reseda luteola	1984	-	1988
Rorippa nasturtium-aquaticum	-	-	1995
R. palustris	-	-	1988
Rosa arvensis	1987	1988	1995
R. canina agg.	1987	1988	1988
Rosa sp.	-	1987	1987
Rubus fruticosus agg.	1987	1988	1995
R. idaeus	-	-	1988
Rumex acetosa	1987	1988	1995
R. acetosella	1987	1988	1988
R. conglomeratus	-	1988	1995
R. crispus	1987	-	1995
R. obtusifolius	1987	1988	1995

	A	J	W
Rumex sanguineus	-	-	1987
Sagina apetala ssp. *erecta*	1987	-	-
S. procumbens	1987	-	1988
Salix alba	-	-	1988
S. caprea	1987	1987	1995
S. cinerea	1987	1987	1995
S. cinerea ssp. *oleifolia*	-	1988	1988
S. fragilis	1984	1988	1995
S. triandra	-	-	1995
S. viminalis	-	-	1995
Sambucus nigra	1987	1988	1995
Sanguisorba officinalis	-	-	1995
Saponaria officinalis	-	-	1984
Schoenoplectus lacustris	-	-	1987
Scleranthus annuus	-	1898	-
Scrophularia auriculata	-	1988	-
S. nodosa	-	-	1995
Sedum acre	1984	-	1988
S. album	1987	-	-
S. rupestre	1987	1988	1988
Senecio aquaticus	-	-	1988
S. erucifolius	1987	-	-
S. jacobaea	1987	1988	1995
S. squalidus	1987	-	1988
S. sylvaticus	1987	-	-
S. viscosus	1987	1984	-
S. vulgaris	1987	1988	1988
Sherardia arvensis	1984	-	-
Silene dioica	1987	1988	1995
S. latifolia	1987	1988	1995
S. x hampeana	-	-	1995
Sinapis arvensis	1987	-	1988
Sisymbrium altissimum	-	-	1987
S. officinale	1987	1988	1988
Solanum dulcamara	1987	1988	1995
S. nigrum	-	1988	-
S. nigrum ssp. *schultesii*	1997	-	-
Sonchus arvensis	1987	-	1988
S. asper	1987	-	1988
S. oleraceus	1987	1988	1995
Sorbus aucuparia	-	-	1988
Sparganium emersum	-	1988	-
S. erectum	-	1988	1987
Spergula arvensis	1987	-	1988
Spergularia rubra	2001	-	-
Spiraea sp.	-	-	1988
Stachys arvensis	1987	-	-
S. palustris	-	-	1988
S. sylvatica	1987	1988	1995
Stellaria graminea	1987	1987	1988
S. holostea	1987	-	-
S. media	1987	1987	1988
Symphoricarpos albus	1987	1988	1988
Symphytum x uplandicum	-	1988	1988
Syringa vulgaris	1984	1984	1988
Tamus communis	1987	-	1988
Tanacetum vulgare	-	-	1988
Taraxacum officinale agg.	1987	1988	1995
Taxus baccata	1987	1988	-
Teucrium scorodonia	1987	-	-
Thlaspi arvense	1987	-	-
Tilia cordata	-	-	1995
T. x vulgaris	1987	-	1995
Torilis japonica	-	-	1995
Tragopogon pratensis	1987	1987	-
Trifolium arvense	-	1987	-
T. campestre	-	1987	1995
T. dubium	1987	1988	1988
T. hybridum	1984	1987	1988
T. incarnatum ssp. *incarnatum*	1990	-	-
T. medium	1987	-	-
T. pratense	1987	1988	1995
Trifolium repens	1987	1988	1995
Tripleurospermum inodorum	1987	1988	1995
Trisetum flavescens	1987	-	-
Tussilago farfara	1987	-	1988
Typha latifolia	-	-	1987
Ulex europaeus	1987	1988	1988
U. gallii	1984	-	-
Ulmus glabra	1987	1988	1995
U. procera	1987	1987	-
Umbilicus rupestris	-	1988	-
Urtica dioica	1987	1988	1995
U. urens	1984	1988	1988
Veronica agrestis	1987	-	-
V. anagallis-aquatica	-	1996	-
V. arvensis	-	-	1988
V. beccabunga	-	1988	1988
V. chamaedrys	1987	1988	-
V. persica	1987	1988	1988
V. polita	1987	-	-
V. serpyllifolia	1987	-	-
Viburnum opulus	1984	-	1984
Vicia cracca	1987	1987	1995
V. hirsuta	1987	1988	1988
V. sativa	1987	-	1995
V. sativa ssp. *sativa*	-	1988	1988
V. sepium	-	-	1988
V. tetrasperma	1987	-	1995
Vinca major	1980	-	-
V. minor	1987	-	-
Viola arvensis	1987	1988	1988
V. hirta	-	1987	-
V. tricolor	-	-	1984
Vulpia bromoides	-	-	1988

Ancient Woodland Indicators in Shropshire

Sarah Whild

In spring of 2001 I had hoped to be running a field-based module on Woodland Plants and their Ecology, but due to the outbreak of foot-and-mouth we were confined to the teaching room for the entire term and did not get to see any woodland plants *in situ*. However, we used that time profitably to draw up what we hope is a definitive list of ancient woodland indicator species for Shropshire and I am greatly indebted to those students who diligently drew up the lists based on their research.

Firstly, what is an ancient woodland indicator, and why should we need a list? Ancient woodlands are loosely defined as sites which have been more or less continuously wooded since about 1600 (Rose 1999), this being the date when reasonably accurate estate maps were first available. Generally, ancient woodlands tend to be more biodiverse than secondary woodlands (woodlands which have arisen on land which was not previously wooded, since 1600) which do not have the same rich assemblages of characteristic woodland herbs (Rackham 1986). Therefore there is a value judgement that ancient woodlands are more worthy of conservation, and it is desirable that such sites should be easily identified (Peterken 2000, Rose 1999).

In this paper I will consider vascular plants that are ancient woodland indicators, or ancient-woodland vascular plant indicators (AWVPs) (Rose 1999). All AWVPs are characterised by their relative inability to colonise new sites – therefore if they are found in a woodland, it can be assumed that they have been there for some considerable time, and if a sufficient assemblage of AWVPs are found in one site, it can therefore be judged to be ancient woodland (Peterken 2000, Rose 1999).

Whether or not a plant can be judged as an AWVP varies from area to area (ibid.). For example, *Mercurialis perennis* Dog's Mercury is judged to be an AWVP in the east of Britain, but in Shropshire, although it is highly characteristic of base-rich woodlands, it also colonises gardens and recent hedgerows. In addition to this, we judged some species to be 'better' AWVPs than others – *Paris quadrifolia* Herb Paris for example, is definitely worthy of five-star status as it is only ever found in the county in ancient sites. To draw up the list, we used the papers by Rose, and Peterken, plus relevant Shropshire publications including Sinker et al (1985) and Lockton and Whild (1995). The ecological descriptions in the Flora were judged as a good guide as to whether or not a plant was **only** found in ancient woodland, but where such plants were also found as relics of woodland, for example *Anemone nemorosa* Wood Anemone and *Oxalis acetosella* Wood Sorrell growing on the Long Mynd, this did not mitigate against their inclusion.

How to use the list

If your site has six unbracketed species from the list below in reasonable abundance, it could safely be judged to be an ancient woodland. Any of the species in bold should be good enough indicators on their own – but it would be extremely unlikely that they would be found in isolation. Species in brackets can only be considered as AWVPs if in 'good company' (with a number of other AWVPs) and there is no doubt that they have not been deliberately introduced.

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References

Rose F. 1999 Indicators of Ancient Woodland: the use of vascular plants in evaluating ancient woods for nature conservation. *British Wildlife* 10: 241- 251.

Peterken G. 2000 Identifying ancient woodland using vascular plant indicators. *British Wildlife* 11: 153-158.

Rackham O. 1986 *A History of the Countryside*. Phoenix, London.

Ancient Woodland Vascular Plant Indicators for Shropshire

Bold = strong indicator. Bracketed species are weak indicators or sometimes planted.

Equisetum sylvaticum Wood Horsetail
Oreopteris limbosperma Lemon-scented Fern
Polystichum setiferum Soft Shield-fern
P. aculeatum Hard Shield-fern
***Dryopteris affinis* agg. Scaly Male Fern**
D. carthusiana Narrow Buckler-fern
Blechnum spicant Hard Fern
Taxus baccata Yew
(*Helleborus foetidus* Stinking Hellebore)
(*H. viridis* Green Hellebore)
***Anemone nemorosa* Wood anemone**
Ranunculus auricomus Goldilocks
(*Ulmus glabra* Wych Elm)
(*Quercus petraea* Sessile Oak)
Moerhingia trinervia Three-veined Sandwort
Hypericum androsaemum Tutsan
Tilia platyphyllos Large leaved lime
T. cordata Small leaved lime
Viola reichenbachiana Early Dog-violet
(*Populus tremula* Aspen)
***Primula vulgaris* Primrose**
***Lysimachia nemorum* Yellow Pimpernel**
Chrysosplenium oppositifolium Opposite-leaved Golden-saxifrage
C. alternifolium Alternate-leaved Golden-saxifrage
Potentilla sterilis Barren Strawberry
(*Fragaria vesca* Wild Strawberry)
(*Geum rivale* Water Avens)
(*Prunus avium* Cherry)
(*Malus sylvestris sensu stricto* Crab Apple)
***Sorbus torminalis* Wild Service**
Vicia sylvatica Wood Vetch
Lathyrus sylvestris Narrow-leaved Everlasting Pea
Daphne laureola Spurge-laurel
(*Cornus sanguinea* Dogwood)
Euonymus europaeus Spindle
(*Ilex aquifolium* Holly)
(*Mercurialis perennis* Dog's Mercury)
Euphorbia amygdaloides Wood-spurge
(*Acer campestre* Field maple)
***Oxalis acetosella* Wood sorrel**
Geranium sylvaticum Wood Crane's-bill
***Sanicula europaea* Sanicle**
(*Myosotis sylvatica* Wood Forget-me-not)
(*Stachys officinalis* Betony)
***Lamiastrum galeobdolon* ssp. *montanum* Yellow archangel**
***Veronica montana* Wood Speedwell**
***Lathraea squamaria* Toothwort**
Campanula latifolia Great Bellflower
***C. trachelium* Nettle-leaved Bellflower**
***Galium odoratum* Sweet Woodruff**
Viburnum opulus Guelder Rose
***Adoxa moschatellina* Moschatel**
Dipsacus pilosus Small Teasel
Gnaphalium sylvaticum Heath Cudweed
Solidago virgaurea Goldenrod
(*Arum maculatum* Lords and Ladies)
Luzula pilosa Hairy Woodrush
Luzula sylvatica Great Woodrush
Scirpus sylvaticus Wood Club-rush
Carex remota Remote Sedge
C. pendula Pendulous Sedge
***C. sylvatica* Wood Sedge**
***C. strigosa* Thin-spiked Wood-sedge**
C. laevigata Smooth-stalked Sedge
C. pallescens Pale Sedge
Milium effusum Wood Millet
Festuca gigantea Giant Fescue
***F. altissima* Wood Fescue**
Poa nemoralis Wood Meadow-grass
***Melica nutans* Mountain Melick**
***M. uniflora* Wood Melick**
***Bromopsis ramosa* Wood Brome**
***Bromopsis benekenii* Lesser Hairy-brome**
Elymus caninus Bearded Couch
***Hordelymus europaeus* Wood Barley**
***Gagea lutea* Yellow Star-of-Bethlehem**
(*Convallaria majus* Lily of the Valley)
Polygonatum multiflorum Solomon's Seal
***Paris quadrifolia* Herb Paris**
***Hyacinthoides non-scripta* Bluebell**
***Allium ursinum* Wild Garlic**
Narcissus pseudonarcissus ssp. *pseudonarcissus* Wild Daffodil
Iris foetidissima Stinking Iris
***Epipactis purpurata* Violet Helleborine**
E. helleborine Broad-leaved Helleborine
***E. leptochila* Narrow-lipped Helleborine**
***E. phyllanthes* Green flowered Helleborine**
***Neottia nidus-avis* Bird's-nest Orchid**
Listera ovata Twayblade
***Orchis mascula* Early-purple Orchid**
Platanthera chlorantha Greater Butterfly-orchid

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Orobanche rapum-genistae at Old Oswestry

S.J. Whild

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